DIFFERENCE B/W ARRAYS AND COLLECTION :

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Difference B/W Arrays and Collections :

Difference Between Arrays and Collection Framework

1 Size (Fixed vs Dynamic)
- Arrays have **fixed size** (decided at the time of creation).
- Collection framework supports **dynamic size** (automatically grows or shrinks).

2 Data Type (Homogeneous vs Heterogeneous)
- Arrays can store **only homogeneous** data (same type).
- Collection can store **both homogeneous and heterogeneous** data (like ArrayList<Object>).

3 Performance
- Arrays are **faster** because they have direct memory access.
- Collections are a bit **slower** due to additional features like resizing, type checks, etc.

4 Built-in Methods
- Arrays have **very limited methods** (mainly length).
- Collections provide **many ready-made methods** (like add(), remove(), contains(), size(), sort() etc.).

5 Memory Management
- Arrays require **manual memory management** (if size needs change, you need a new array).
- Collections handle **memory management automatically** (internally manages resizing).

6 Data Access (Index vs Iterator)
- Arrays use **index-based access** (faster random access).
- Collections provide multiple ways — **Iterator, for-each loop, etc.**

7 Works with Primitives?
- Arrays work directly with **primitives** (int[], double[]).
- Collections work only with **objects** (for primitives you need wrappers like Integer, Double).

8 Ease of Use
- Arrays are **simple** to use for small, fixed-size data.
- Collections are **more powerful and flexible** for real-world programming where data size changes.

9 Real-Life Use
- Arrays are used where **fixed data** is required (like storing 7 days of week).
- Collections are used where **dynamic data** is required (like storing student records in a class).